Message

From: Woodbury, Lynn [woodburyl@cdmsmith.com]
Sent: 12/17/2019 11:31:37 PM
To: Partridge, Charles [Partridge.Charles@epa.gov]
CC: Wall, Dan [wall.dan@epa.gov]; Greene, Nikia [Greene.Nikia@epa.gov]; David Shanight [shanightdt@cdmsmith.com]
Subject: RE: new papers

Here is the link to this article on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/9019970

It is in Spanish, but we could still request it in the hopes that there is a useful tabular summary of data. Also, we have folks here in CDM Smith that are fluent in Spanish and could translate if necessary.

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Lynn Woodbury | CDM Smith | 555 17th Street, Suite 500 | Denver, CO 80202 | direct: 303.383.2382 | fax: 303.308.3003 | woodburyL@cdmsmith.com

From: Partridge, Charles <Partridge.Charles@epa.gov>
Sent: Tuesday, December 17, 2019 2:39 PM
To: Woodbury, Lynn <woodburyl@cdmsmith.com>
Cc: Wall, Dan <wall.dan@epa.gov>; Greene, Nikia <Greene.Nikia@epa.gov>
Subject: new papers

Lynn,

Here is another paper that we need to look at and include in the table, we may not need to include them in the figure. Don't have access to the article and it may be in Spanish. I got the numbers from a Table that Montana Resources had shared with Nikia.

An Esp Pediatr. 1996 Sep;45(3):281-5.
Gonzales de Dios et al 1996 Spain meconium study of full-term
n- 38
mean numbers
ug/kg (they converted the numbers from as reported in ug/mg to ppm to match the hailer study)
Copper 36,400
Manganese 4,100
Moly- 145
Lead 289
Zinc 76,000

OBJECTIVE:

Trace elements have acquired major importance in the knowledge concerning corporal composition and in the comprehension of their metabolic participation in organic processes. The objective of this study was to know the concentration of trace elements in biological material (serum, meconium and feces) from preterm and fullterm infants during the neonatal period.

PATIENTS AND METHODS:

Concentrations of Al, Ca, Cr Cu, Fe, Mg, Mn, Mo, P, Pb and Zn were determined simultaneously in stools and serum by induction coupled argon plasma-atomic-emission spectrometry (ICP) of 12 preterm and 38 fullterm infants. Stools were collected for the 1st (meconium), 10th and 20th day and serum on the 10th day.

RESULTS:

Compared to serum from preterm infants, fullterm infants had an elevated ($p < 0.05$) value of potentially toxic trace elements (Al and Pb). Compared meconium from fullterm infants, preterm infants had an elevated excretion of Cu ($p < 0.001$) and Fe ($p < 0.01$). Compared to stools from the 10 and 20th day from preterm infants, fullterm infants had an elevated excretion of Fe ($p < 0.05$). Stool excretion of all of the trace elements increases throughout the days during the neonatal period, whereas Mn decreases.

CONCLUSIONS:

The mineral content of meconium and stools in newborns rarely has been described and ICP is an interesting method of assessment of trace elements in these biological samples during the neonatal period.

Charles R. Partridge, Ph.D.
Toxicologist
U.S. EPA, Region 8
Technical Assistance Branch
Denver, Colorado
303-312-6094 (office)
720-498-3715 (cell)